Policy that works for forests and people no. 12

Bosque del Pueblo, Puerto Rico

How a fight to stop a mine ended up changing forest policy from the bottom up

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The International Institute for Environment and Development (IIED) series on *Policy that works for forests and people* aims at a better understanding of the forces at play in contests over policy, the winners and losers, and factors that affect policy outcomes. It also describes the processes that make and manage good policies and the policy instruments that work in different contexts. By dealing with policy in practice – in the 'real world' of people and their institutions – the series aims to go beyond the frequently heard complaint that there is a lack of 'political will' to change, by showing how policy can change for the better. Other studies in the series to date are:

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Contents

Acronyms

CANARI	Caribbean Natural Resources Institute
CIBC	Community Institute of Biodiversity and Culture
DFID	Department for International Development
DNER	Department of Natural and Environmental Resources
IIED	International Institute for Environment and Development

Preface

To maintain and enrich human values, before anything, and likewise to grow in the awareness of doing one's patriotic and historic duty. To avoid, by every possible means, grandstanding and fighting over power. To practice democracy to the utmost, without losing sight of firmness and the larger picture. To know that everyone counts, no matter his or her age, knowledge, colour or nationality. To seek consensus where it matters, and where it does not. To be certain that what one does is important, but never forget what remains to be done. Today we dream; tomorrow we make the dreams come true; then we dream again, to make what seemed impossible come true.

Alexis Massol González, 2006

Foreword

In 1999, James Mayers and I published *'Policy that Works for Forests and People'.* Offering an analysis of experiences in many countries, we showed how forest use can change for the better if forest policy processes combine four ingredients well: (a) civil society concern; (b) political commitment; (c) financially viable institutional roles; and (d) knowledge – partly evidence, but mostly good ideas.

A couple of years later, I met Arturo Massol Deyá at a conference on participatory forestry organised by the Caribbean Natural Resources Institute. Arturo's story of 'policy that works' in Puerto Rico was the most compelling and exemplary that I had heard to date. Major changes in forest policy, planning, funding and practice have been inspired by a Puerto Rican community organisation, Casa Pueblo. Arturo told of a community whose vision of *autogestión comunitaria* – resilient and self-reliant development – has influenced neighbouring communities, younger generations and state authorities.

Casa Pueblo shows how the real world of sustainable development is rooted in local institutions – civil society groups and networks of many types, as well as local government and entrepreneurs. It is bottom up, participatory, complex, and informed by many perspectives. But the world of 'Development' and aid remains centralised, top down, and exhibiting a lust for simple models. Furthermore, the literature is dominated by initiatives driven by powerful players – notably the aid system operating in poorer countries in the case of tropical forestry. Puerto Rico is largely invisible to the aid system (despite many people suffering from poverty) yet it has produced a significant model in Casa Pueblo.

In a modest way, IIED hopes that this international publication of Casa Pueblo's story will offer an independent validation of their approach – and a little more confidence to reach even higher goals.

Stephen Bass
Senior Fellow
IIED, London.

Executive Summary

In most forest policy processes the central actor is the State, with other stakeholders playing lesser roles as catalysts, supporters, or sometimes impediments. But forest policy can also be driven from the bottom up, by community initiatives and stakeholder demands. This case study tells the story of a small community-based organisation in the mountains of Puerto Rico that has spearheaded a remarkable process of national forest policy change over a period of 25 years. The story is important because it provides much guidance on what makes such bottom up policy processes effective.

Like many parts of the developing world, Puerto Rico, a Caribbean island territory of the United States, has a culture and institutions that have been deeply influenced by its colonial history. From the arrival of the Spanish in 1493 through the takeover of the island by the U.S. in 1898, the State assumed authority and ownership over most natural resources, and the situation changed little as self-government increased over the last century. Forest was cleared for agriculture and subsequent industrial development and urban expansion, with only a few critical areas strictly protected through forest reserves. Meanwhile, people's relationships with forests became more and more distant, and poor planning decisions, affecting the island's hydrological resources and biodiversity, became increasingly common. By 1980, disregard for the importance of forests and watershed services was so great that the government decided to raise revenue by opening the mountainous centre of the island to open pit mining. This marked the start of a grassroots campaign to change forest policy, which continues to this day.

The possibility of open pit mining within the community's watershed spurred a small group of people in the rural town of Adjuntas to establish an organisation, the *Taller de Arte y Cultura de Adjuntas*, known as Casa Pueblo, to fight the plans. Through persistent and carefully designed advocacy over a period of more than five years, the group overcame local apathy and official hostility to reverse the government's decision, only to see the threat re-emerge a few years later. Casa Pueblo's second campaign, from 1992 until 1996, started from a stronger base of both experience and public support and resulted in the passage of a national law prohibiting open pit mining.

At that point, the group became directly involved in forest policy issues. It first demanded the establishment of a locally managed forest reserve on the land that had been allocated for mining. Largely through demonstration of enormous public support, it succeeded in convincing the government to establish the Bosque del Pueblo (People's Forest), the country's first new forest reserve in 40 years, and to enter into a collaborative agreement to manage it. Since that time, despite limited contributions from the government, Casa Pueblo has been able to effectively implement an ambitious management plan for the forest, including programmes in forest rehabilitation and conservation, provision of visitor services, and environmental education, along with innovative mechanisms for stakeholder participation and oversight.

With the establishment of the forest reserve, some of the group's most important initiatives from a national forest policy standpoint were still to come. These have included successful advocacy for a law mandating the creation of biological corridors linking forest reserves along the island's central spine; the creation of a national conservation fund for the purchase of critical watershed lands; and the development of an integrated conservation and management plan encompassing ten municipalities including Adjuntas and linking five forest reserves. The policy results of this unceasing advocacy can be summarised as follows:

- *An increased recognition of the need to conserve secondary forests for their provision of critical environmental services:* since the establishment of Bosque del Pueblo, six new forest reserves, largely comprised of secondary and urban forest, have been established.
- *A shift from an isolated focus on forest reserves to whole watershed and ecosystem approaches:* recent legislation has resulted in the establishment of biological corridors for the movement and protection of flora and fauna, and in the acquisition and protection of critical watershed areas.
- *The adoption of participatory planning and co-management approaches that involve a range of stakeholders besides the state:* the Bosque del Pueblo experience has set a precedent for community participation in managing state forests in Puerto Rico, and more importantly in substantially changing the way that the government works with others.
- *Acceptance of the responsibility of the state to adequately finance forest and watershed protection:* in addition to establishing the US$20 million national conservation fund, the government, which had for years provided the minimum contribution possible to forest management, now pays Casa Pueblo and other co-management partners a negotiated annual management fee.

All Casa Pueblo's work is grounded in its commitment to processes of *community self-realisation*, aimed at overcoming the sense of helplessness, dependency and marginalisation experienced by many poor rural communities. Its focus has been on Adjuntas, but it has also drawn wider circles of "community", encompassing neighbouring towns, Puerto Rican civil society generally, and strategic alliances with like-minded groups outside the island's boundaries. Its relation to the state has been more distant, and part of its ideology is based on a belief in civil society's obligation to monitor and when necessary oppose the actions of the state.

In analysing some of the keys to Casa Pueblo's success in transforming forest policy, the following points stand out:

1. Bottom up policy processes need to start with making forest management meaningful to people, by:

- focusing on human development and quality of life issues: clean air and water, learning and education, pleasure and recreation;
- highlighting forests' role in providing environmental services such as water supply and quality;
- offering new economic opportunities based on sustainable forest use to economically marginalised rural areas;
- making it easy for people to be part of forest planning processes.

2. Ways that grassroots actors can overcome power imbalances and secure a place at the table include:

- preparing proposals and arguments scrupulously to forestall claims of inadequate technical capacity at the community level;
- demonstrating public backing, and in so doing drawing in the politicians;
- maintaining a moral high ground to avoid accusations of bias or corruption;
- taking control of the debate whenever possible rather than falling into a pattern of reacting to the government's positions;
- having trustworthy and effective intermediaries to assure that communication does not break down.

3. Making participatory management work requires:

- giving new management agreements the time and flexibility to evolve;
- employing participatory management approaches that are both economically efficient and technically sound;
- continuing to bring in new stakeholders to widen the circle of participation.

4. Achieving environmental objectives can be helped by:

- thinking beyond protected areas to ecosystem-wide and whole watershed management approaches;
- pushing not only for discrete victories but for lasting legal changes;
- drawing on the resources of the private sector, who are important recipients of forest environmental services.

Perhaps the most important key to Casa Pueblo's success has been the strength of its vision of economic development based on self-reliance and equitable and sustainable resource use, combined with social development through the use and strengthening of local cultural values and practices. It sees various forms and levels of change as being mutually reinforcing: changes in public policy depend on and contribute to socio-cultural and ideological changes, changes in livelihood patterns and opportunities, and changes in the management of natural resources. This vision has sustained its work over 25 years, helping it to effectively refute widespread perceptions and arguments that community-based resource management initiatives are not effective. By making forest policy a priority for people, it has driven a long-overdue change in forest policy, towards one that can make a greater contribution to Puerto Rico's sustainable development.

Acknowledgements

This case study is the product of a two-year collaboration between the *Taller de Arte y Cultura de Adjuntas*, locally known as Casa Pueblo, and the Caribbean Natural Resources Institute (CANARI). The development of the case study was designed as a learning process for the two institutions and as such involved a great number of people. The authors learned much from all of them, and we hope that they also drew some insights and new perspectives from their involvement.

We wish to first thank all those who participated in the workshop at Casa Pueblo in March 2003, which drew out the main events and lessons of the Bosque del Pueblo story. These included: Edwin Camacho, Miguel Canals, Eduardo Cintron, Lucy Cordero, Alexis Dragoni, Afortunado Feliciano, Brunilda García, Fernando Lloveras, Ariel Massol, Magdamell Quiñones, Felix Santiago, Fernando Silva, Inés Vélez, and Rossana Vidal, as well as several persons acknowledged below.

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1. Introduction

Most of the stories in the *Policy that works* series have been about national policy processes, driven and coordinated by the State, albeit with a good deal of stakeholder participation in many cases. The story told here is rather a different one: how a small community-based organisation in the mountains of Puerto Rico became a driving force for a bottom up process of policy change that has been reshaping the way the country's forest resources are perceived and managed. At the most basic level, it is a story about the creation and management of a new forest reserve in Puerto Rico, the *Bosque del Pueblo*, or the People's Forest. But it is also a larger story, one of tenacity, wise choices, some mistakes, and plenty of courage. It is a story that gives the lie to contentions that experiments in community-based conservation are destined to failure, and one that provides considerable guidance on what makes such experiments succeed. Finally, it is a story about how much forest policy matters to the lives of average people, even those who have little actual contact with forests, and about how good forest policy deals not just with protecting forests, but with addressing those human needs and aspirations that forests can help to meet.

This study documents the results of a process of self-reflection carried out by the story's protagonist, an organisation called Casa Pueblo, and facilitated by the Caribbean Natural Resources Institute (CANARI) during the course of 2003. The authors, who include three members of Casa Pueblo's governing body, a colleague from Puerto Rico's Department of Natural and Environmental Resources, and a representative of CANARI, were actively involved in this process, along with many of Casa Pueblo's members, friends, and professional colleagues throughout Puerto Rico.

This document begins by providing a little background on forest management in Puerto Rico, then describes in some detail the history of Bosque del Pueblo and related initiatives through to early 2004, followed by an analysis of the experience, its impacts, and its implications for other countries facing similar challenges of development.


'Casa Pueblo' a co-manejar el Bosque de Adjuntas
EL MUNDO
Sin Perder Bellezas Naturales
Gobernador Favorece la Explotación de Minas
Berríos Radica Legislación Crearía Corporación Explotar Minas en Isla
Partido Unión Puertorriqueño Favorece Explotación de Minas
Apoyan Explotación De Minas
Adjuntas derrotó las minas
Utuado, Adjuntas y Lares
Declaran Reserva Forestal la zona minera de la Isla
The Associated Press
PRIMER PLANO
Al rescate de un área forestal
Juran proteger el Bosque del Pueblo

2. How history shaped Puerto Rico's forests – and what they mean for its future

Forest policy in Puerto Rico

This story takes place in Puerto Rico, an island in the Caribbean with a population of nearly four million, and a colonial experience stretching back for more than five hundred years. Its sleek freeways and glistening hotels reflect its status as a territory of the United States, but widespread poverty, government deficits, and poor social services give it more in common with its developing country neighbours.

Forests, ranging from mangroves and dry forests along the coast to rain and cloud forest in the higher mountains, once entirely blanketed the island, providing numerous goods and services for the pre-Columbian population. The arrival of the Spanish in 1493 can be said to mark the start of formal forest policy in Puerto Rico, with the Crown dictating the rules and conditions under which forests could be used. This pattern of "policy from above" continued following the takeover of the island by the United States in 1898, when the U.S. military replaced the Spanish forest service as the guardian of the State's interests. Over the past half-century, Puerto Ricans have largely gained control of their own policy matters, while remaining subject to U.S. federal laws and regulations.

Since Puerto Rico became self-governing, some policy issues have stimulated fierce public participation, particularly the ongoing debate on whether Puerto Rico should remain a territory, become a new U.S. state, or seek independence, with the major political parties identifying themselves largely on their position on the matter. But until the events described in this case study, forest policy generally did not spark much interest among an increasingly urban population or their politicians, and policy processes were largely left to the technocrats, whose concerns have focused on the management of state forest reserves, most of which were established at the beginning of the last century for the protection of critical water catchments and endangered species and the provision of recreational opportunities.

A legacy of exploitation

Potential visitors scanning brochures and tourism advertisements must surely believe that Puerto Rico's forest management is effective, as the island seems a lushly forested paradise. But a closer look at the country and its history tells a very different story, one in which centuries of forest destruction and degradation have severely compromised critical environmental services, including watershed and biodiversity protection, negatively impacting the island's development (see Box 1).

During Spanish rule, forests were cleared to make way for agricultural production of desirable export crops such as sugar cane, tobacco, and coffee, a pattern that continued for several decades following the U.S. takeover. World War II and its aftermath led to a shift in the local economy towards industrial development driven by U.S. interests. Cheap labour, tax and other economic incentives, political stability, and a benign climate encouraged investment, and over time Puerto Rico became a centre for high-impact industries such as petrochemicals, pharmaceuticals, and electronics. This economic model resulted in increased living standards, but also in urban migration and its attendant social consequences as well as serious environmental impacts. By the late 1940s, only 6% of the island was still covered in natural forest.

Box 1. Puerto Rico's changing landscape

Like those of most Caribbean islands, Puerto Rico's native forests were largely cut to make way for plantation agriculture, which dominated the economy for hundreds of years. The 1899 census documents a mosaic of land cover that reflected the beginnings of a trend of urban migration and desertion of agriculture. Over half the land was in pasture, while major (but already declining) crops included coffee, fruit trees, sugar cane, and tobacco. Approximately 18% of the island was covered by forest. By the late 1940s the rate of deforestation and urbanisation was so high that only 6% of the island remained in native forest, while cropland and pastures had been reduced to about 42% of the land cover. The low value placed on forests by decision makers is reflected in the use of a number of forest reserves for secret military experiments that included research on the impacts of Agent Orange and nuclear radiation.

Today's forest composition is a combination of native and naturalised species. Lands that were previously used for agriculture, especially in the central mountainous region of the island, quickly self restored after their abandonment. Traditional farming practices recognised valuable native tree species and left patches of seed sources through the disturbed landscape. Abandoned coffee shade areas resulted in a mixture of older shade trees and young saplings. The shade protected the soil from erosion while contributing inputs of organic matter, thus maintaining higher recovery potential. Another important factor influencing forest structure is the disturbance regime, particularly the impacts of hurricanes and landslides after heavy rain events. The resulting mosaic forest compositions present management challenges that require understanding and vision.

Although subsequent decades saw some forest recovery in abandoned agricultural lands, rapid and intensive industrialisation, increased population density, and land clearing using heavy machinery have had grave impacts, especially near hydrological basins. Problems include surface water eutrophication and contamination from industrial chemicals, inorganic fertilisers and pesticides; elevated organic wastewater released through agricultural product processing; and the use of secondary forest areas for poorly planned urban and suburban expansion, both along the fertile coastal plains and in lower and middle watershed areas. The problems are compounded by growing consumerism within Puerto Rican society, resulting in increased commercial sprawl, energy consumption, and generation of solid waste. Perhaps Puerto Rico's greatest environmental threat is the severe contamination of many of its principal water sources from sedimentation and industrial and agricultural chemicals. Reversing the damage and saving the country's water resources has literally become a matter of life or death.

A growing disconnect between people and forests

Puerto Rico is similar to many parts of the developing world, where economic transformation over the past century has substantially altered people's relationship with forest resources.

Even following the abolition of slavery and well into the twentieth century, the vast majority of Puerto Ricans were landless workers in plantation-based agricultural production systems who depended on nearby forests for a range of products, including charcoal (primarily from mangrove areas), fuel wood, and timber.

Following the passage of Puerto Rico's first Forest Act in 1917, forest reserves were established to protect critical ecosystems and watershed areas from growing pressure, particularly for charcoal production in coastal mangroves and agricultural expansion in upland forests. This policy response to the unsustainable exploitation of Puerto Rico's forests aided forest recovery but also helped sever the economic and cultural links that once joined people to the forests.

As reserves were closed to traditional uses, local people came to refer to them as *La Forestal*, indicating respect and recognition of their protected status, but also a sense of separation. Although some uses were permitted under the supervision of forest rangers, the direct connection of the residents with their native forests was substantially weakened.

Industrial development during the latter part of the twentieth century lured many Puerto Ricans to the cities, and an increasing use of imported stoves rather than traditional charcoal and fuel wood eliminated the need for even rural people to gather and use forest resources on a daily basis. Puerto Ricans increasingly saw the forest largely as a place for recreation, much valued as a part of the country's patrimony but little known and rarely visited.

Continuing threats – and revived community interest

The forest reserves established in the first half of the twentieth century legally protected only the last few vestiges of natural forest, at a time when Puerto Rico had very little remaining forest cover. But the secondary forests that took over abandoned agricultural land in subsequent decades were not incorporated into the system of reserves and were generally seen as having little value, despite providing many critical environmental services, including watershed and habitat protection that the existing forest reserves were not extensive enough to effectively provide.

As the pace of urban and industrial expansion has increased in recent decades, and as politicians have looked for ways to create new economic opportunities for a growing and increasingly urban population, secondary and dry coastal forests have been grabbed up for development. A construction philosophy based on sprawling housing complexes, commercial centres with substantial parking areas, large industrial complexes, and extensive road systems has become the new threat to Puerto Rico's forests.

Although today about 40% of Puerto Rico is tree covered, only a small portion of that is legally protected. The rest largely consists of fragmented areas of secondary forest that are privately owned and thus in danger of conversion. A few recent community conservation efforts that have recognised the critical environmental services provided by forests, including secondary forests, have resulted in the first new additions to the island's forest reserve system in many decades. These new initiatives are re-establishing the link between forests and local communities and offer new, more participatory, approaches to forest management. The first and most ambitious of these initiatives is the creation of Bosque del Pueblo, the subject of this case study.

3. A twenty year journey from open pit mining to forest protection

Responding to an imminent threat: ¡No a las minas!

In August 1980 the Government of Puerto Rico announced its intention to open up the mountainous centre of the country to open pit mining operations for copper and other precious metals by awarding contracts to two multinational corporations based in the United States. Mining appeared to promise a way to generate jobs and improve the country's economy, and the plan had the support of the Governor, the local municipal governments, the main political parties, and many sectors of society. Despite the environmental risks, there was little local opposition. Ignorance and fear of reprisals (the government tended to label those who opposed development schemes involving American companies as anti-American separatists and revolutionaries who were against progress) contributed to initial widespread apathy.

However, in Adjuntas, a coffee-producing town with a population of around 19,000 close to the proposed mining operations, a small but diverse group of people decided to take on the governments of Puerto Rico and the United States, as well as the economic power of the mining companies. Thus was born Casa Pueblo, formally known as the *Taller de Arte y Cultura de Adjuntas* (see Box 2), and the beginning of a process that has changed the way forest resources are perceived and managed in Puerto Rico.

The group that formed Casa Pueblo was bound by a shared vision of a more resilient and self-reliant community, one that was able to transform itself through development strategies that were socially, economically, and environmentally sustainable. This implied breaking the bonds of dependency and political manipulation and learning to speak in its own voice and pursue its own vision through its own initiatives. The group knew that achieving this vision would be a challenge. For economically marginalised Adjuntas, it had become easier to survive on government proposals, programmes, and donations, despite the cost of growing dependency, than to undertake a process of economic self-sufficiency that would force it to confront the government's economic and political power and deal with difficult issues like financing, efficiency, accountability, earnings, and work ethics.

Developing a methodology for community engagement

To prepare for the challenge, the group's first step was to define a seven-step protocol for community work, which has continued to evolve through success and failure.

First: Know what you're fighting about

The group realised that it would need to back up its arguments with convincing technical evidence. To learn more about the proposed mining operations, it gathered official documents and other information from the scientific studies undertaken in the previous decade. These had identified 17 mineral beds around Adjuntas and the surrounding municipalities of Utuado, Lares, and Jayuya, which were proven to have adequate amounts of copper, gold, and silver for commercial exploitation. The mining companies were proposing large-scale operations, and the government had set aside more than 15,000 hectares for this purpose. Because of the porphyritic nature of the minerals, the only possible extraction method was the use of open pits – massive craters of up to 600 m deep and 1.5 km wide.

Second: Develop solid arguments based on good research

Armed with this information, the group carefully developed its interpretation of the scientific, environmental, and political implications of the mining operations. The mining company's own reports indicated that virtually all the topsoil in the mining zone was to be stripped and discarded in a man-made lake, reducing by 30% the flow from one critical source of water for more than one million people in the north of the island. The group also concluded that the operations were likely to contaminate the air, agricultural soils, and sources of potable water. The area's steep topography and high rainfall (more than 300 cm per year) could be expected to create further problems of erosion, acid run-off, and sedimentation of lakes and rivers. For the communities in the area, the result would be an ecological, economic, and social catastrophe.

Based on that assessment, the group rejected the arguments of earlier opponents of mining who lobbied under the banner of "Puerto Rican mines or no mines", and concluded that the point was not who did the mining, Puerto Ricans or foreigners, who received the rewards, capitalists or workers, or who negotiated the agreement, the local government or Washington. The fundamental issue was that mining was a threat to the land and the people, and thus to the survival of Puerto Rico as a nation. Casa Pueblo's position was *No a las minas* (no mines) under any conditions.

Third: Prepare the community to take the lead in the process

At the start, the group was able to draw on the interest and support of the country's intelligentsia, technicians and university professors who shared their knowledge and expertise with Casa Pueblo and the community. But even while learning from them, the group realised that it could not simply hand over the battle to others, no matter how well intentioned they might be. They needed to build the community's own capacity to be actors in the process, with their own leaders.

Fourth: Stay away from partisan politics

Casa Pueblo's unequivocal position of no mining isolated it from the country's political parties, as well as other sectors that supported mining, whether (depending on political affiliation) for Puerto Rico's development as a colony, as a state of the U.S., or as a future republic. Given the highly partisan nature of Puerto Rican society, by staying away from politics Casa Pueblo not only avoided having the movement co-opted for other purposes, but was also able to attract a widening circle of supporters from across the political spectrum, something that had proven difficult at the start.

Fifth: Keep a steady hand at the wheel

The government's initial reaction to Casa Pueblo's opposition to its plans included intimidation, harassment, and infiltration to provoke conflict. By demonstrating through personal sacrifice that they were acting through conviction and patriotism, the leadership of Casa Pueblo was able to hold the movement together despite the fear and confusion the government's response had provoked within the Adjuntas community.

Sixth: Keep the channels of communication open on all sides

Casa Pueblo wanted to build a community and a nation united in opposition to mining, but the mining plans had many supporters both in and outside of Adjuntas. Believing that it would be more constructive to engage these supporters than to ignore them, Casa Pueblo was careful to treat its opponents respectfully and make it clear that it was willing to listen to all sides.

Seventh: Design a coherent strategy that uses traditional culture to break through apathy and encourage community involvement

The group knew that once the mining project with its million-dollar infrastructure investment got underway, there would be no way to stop

it. But despite the urgency, much of the community remained apathetic and indifferent. Many were afraid to be publicly identified with the anti-mining movement because of a perception that it was linked to the independence movement, which was treated by the government at that time as highly subversive. Casa Pueblo's first response was to organise a day of visits to various locations in the town, to talk about the threat the mining posed and to build support. The last activity of the day took place in a local plaza, where the group members found themselves virtually alone except for their immediate families and the police. This failure led to several months of reflection on what to do and how to do it, resulting in a strategy based on the use of Puerto Rican culture to carry the message and bring the community together. In order to attract greater local involvement, Casa Pueblo organised itself into a number of cultural interest groups: artisans, musicians, troubadours, a children's folkloric dance group, and so forth. The next step was a concert of traditional Puerto Rican music (*Patria Adentro)*, with the theme, *"Sí a la Vida* (Yes to life)*, No a las Minas"*, which was taken to communities, towns, schools, and universities in the area. The strategy also included kite festivals on the themes of environment and culture, murals and activities involving noted Puerto Rican poets, musicians and artists.

Casa Pueblo used every opportunity to educate people about the threat. Its members spoke at innumerable conferences and meetings throughout the island; it published information bulletins and even books documenting its findings, held press conferences, and used documents and photographs of mining operations in the United States to refute the claims of the mining company that it would be socially and environmentally responsible. The message was: if this is how they operate in their own country, imagine what they'll try to get away with in someone else's! It also gathered information about the companies' operations in Latin America to demonstrate that, despite the government's arguments to the contrary, most of the jobs generated by the operation would likely go to companies in the United States and little of the earnings would be spent in Puerto Rico. As the movement gained steam, it demonstrated its growing support through marches, tree plantings, and the collection of thousands of signatures on petitions opposing the mining.

After more than five years of effort, the campaign concluded with an initial victory: in 1986 the government announced its decision not to proceed with the mining contracts and bought back the lands that had been purchased by the mining companies. Nonetheless, the doors remained open, since the area was still zoned for mining.

The spectre of mining resurfaces

In 1992, the same government that had rejected the earlier mining plans signed a new agreement with an American company, Southern Gold Resources. This time, Casa Pueblo was ready. No longer a small group of individuals, it had the force of the community behind it and its own revenue stream from its Madre Isla coffee venture (see Box 2).

The strategy for the new campaign included creating spaces for the participation of specific sectors of the community: the youth and schools, the churches, and civic, cultural, and environmental groups. Radio, television, and the press were used to carry the campaign to the national audience. The organisation turned the government's practice of public hearings on its head by organising a People's Forum in September 1993 and inviting the Secretary of the Department of Natural and Environmental Resources (DNER) to present the agency's position on mining. He was followed by a panel of local people, including a priest, an engineer, a farmer, a family doctor, and a secondary school student, who posed questions pointing out the weaknesses of the plan; fifteen children also spoke in opposition. Perhaps the greatest moment of the night was the announcement by the Mayor of Adjuntas, an erstwhile fervent supporter of the mining project, of his decision henceforth to oppose it: the organisation had succeeded in reversing public policy, at least at the local level.

Understanding that they were fighting overwhelming economic and political forces that had been advocating for mining operations for more than thirty years, Casa Pueblo did not waste time celebrating this victory. In the succeeding weeks, it kept up the pressure with a series of well-publicised activities grounded in local culture: a celebration of the birthday of the revolutionary and national hero Eugenio María de Hostos, a Latin American fiesta, concerts, and conferences in the schools and universities.

The organisation's efforts got a boost at the national level through a series of articles that ran on the first page of *El Nuevo Día*, a widely read paper, presenting the positions of Casa Pueblo along with those of the Secretary of DNER. Their arguments got a national audience again with the organisation of a press conference "in the sky", with a local television station capturing by helicopter the image of more than 800 students arranging themselves in the Adjuntas secondary school's parking lot to spell out "No Mines". The two words spoke volumes, and were reinforced by increasing numbers of supporters.

During this period, Casa Pueblo learned that mobilising public support required not just commitment to a worthy cause, but imagination, creativity (including the use of clever slogans), and organisational skills. The campaign gradually drew in groups from neighbouring towns and national organisations, as well as support from outside of Puerto Rico. In June 1995, by entering the mining zone to plant trees at the top of Cala Abajo, one of the proposed mining sites, around 300 people used civil disobedience to demonstrate their resolve to stop the mining. Marching through the streets of Adjuntas, they chanted the campaign's slogan,

Box 2. Casa Pueblo: Creating an alternative vision of community development

Casa Pueblo is a legally recognised not-for-profit organisation established in 1980. Its founders included Adjuntas residents Alexis Massol González, an engineer, and Tinti Deyá Díaz, a teacher, who remain the heart and soul of the organisation and whose children have also come to play leading roles. Alexis Massol González has served as Director of the organisation throughout its history.

Casa Pueblo's structure aims to balance participation and efficiency. An active nine-member Board of Directors provides leadership and oversight. Around 20 collaborating members, who include scientists, technicians, artists, craftspersons, students, and others, form the core implementation team. The wider membership includes more than 350 persons who provide voluntary support to campaigns and projects. These members are also invited to be part of the Community Management Council, which meets annually to provide policy guidance on the development of Bosque del Pueblo and other Casa Pueblo initiatives. While grounded in a spirit of volunteerism and self-help, Casa Pueblo also employs a small staff to assure the efficient management of its office, finances, shop, and environmental education programmes, as well as the forest reserve.

The name Casa Pueblo comes from the historic building that the organisation bought and restored, with much volunteer effort, transforming it into a local centre for Puerto Rican culture. In addition to offices, the building includes a room for expositions and activities, a library, and a shop selling local products. The grounds house a butterfly garden, a weather station, a hydroponic garden, and a nursery, which are used for research on Bosque del Pueblo's management. A bustling community resource, the building, which operates on solar energy, has witnessed many critical and emotional moments in Casa Pueblo's history. It currently receives hundreds of visitors each week, who stop to learn about the organisation's work and arrange tours of the forest. These visitors also contribute to the local economy by patronising restaurants and shops in the area.

Casa Pueblo is financially self-sufficient as a result of successful business initiatives, most notably Café Madre Isla coffee production and marketing. The enterprise, which began in 1989 and is carried out through voluntary work aimed at creating an ethic of commitment and community effort, has been highly successful. The coffee is sold at Casa Pueblo as well as through local outlets. The voluntary work brings together young people and adults, who gain experience in production, costing, marketing and quality control. In a more recent self-sufficiency initiative, portions of Casa Pueblo's coffee farm Finca Madre Isla have been converted for nature tourism and educational use. Rustic cabins, a meeting room, interpretive trails and other facilities have been built to receive guests from Puerto Rico and overseas visitors, as well as for courses and workshops organised by Casa Pueblo and others.

"Ya lo decidimos, no a las minas" ("The people have decided: No to the mining"). Two weeks later, the government, accepting defeat, signed Law Number 1171 prohibiting open pit mining in Puerto Rico, thus reversing long-standing public policy, this time at a national level.

Turning threat to opportunity: Sí a la vida

Casa Pueblo's campaign against the mining proposal was also a campaign in support of alternate uses for the land, ones that were non-polluting and that guaranteed the protection of the area's watersheds, natural beauty, and wealth of flora, fauna, and minerals. But the mining exploration had already done considerable damage to the area. Deforestation, excavations, tunnels, and a vast network of boring holes up to 650 metres deep had upset the ecological balance, contaminated water sources and disturbed flora and fauna. For Casa Pueblo, the next challenge was therefore to rescue the land and guarantee its recovery. Immediately following the defeat of the mining proposal, it initiated a campaign to have the zone designated a forest reserve.

The first activity was a forum held in August 1995 on the importance of Puerto Rico's tropical forest resources. With the help of respected Puerto Rican scientists and conservationists, Casa Pueblo developed a plan of action that included three main activities: to prepare a proposal for a forest reserve in the mining area that was scientifically and socially sound; to design a structured and coherent strategy for promoting it; and to educate and seek the participation of members of the community in making the forest reserve a reality.

The proposal for the reserve had to be scientifically solid in order to be acceptable to the government, which had not designated a new forest reserve since 1951. It also had to be prepared in a way that made it accessible and understandable to all members of the community. The voluminous document looked at the area's natural and cultural resource values and its role as a biological corridor. It also argued for the need to expand protection within the watershed, which was experiencing extremely high rates of land conversion and deforestation. The proposed boundaries included the two richest mineral beds in Puerto Rico, the same ones that had attracted mining interests over the previous 35 years.

The campaign to gather support for the proposal sought to raise the level of the discourse, moving from environmental protest to proposals of concrete, specific, and achievable alternatives. This was a new approach in the history of environmentalism in Puerto Rico, and it required a real mental and cultural shift. To make that shift, Casa Pueblo

suggested something truly radical: management of the proposed forest reserve, not as with all other forest reserves in Puerto Rico by the government, but rather by the community.

In order to demonstrate the community's readiness to take on the task of transforming the mining zone into a forest reserve, Casa Pueblo returned to the strategies that had proven successful in its earlier campaign: high profile activities such as a tree planting ceremony that included a concert by Danny Rivera, an internationally known Puerto Rican singer, radio programmes and petitions. The networks with local and national churches, schools, and environmental groups were reactivated. Signatures were collected on thousands of pre-printed postcards in favour of the forest and sent to the Governor from various locations within and outside of Puerto Rico at strategic moments in the campaign. The press conference in the sky was reprised, this time with the students of the secondary school spelling out *Bosque Sí* (Yes to the forest) for the circling media helicopters. Taking guidance from the nineteenth century Cuban freedom fighter and poet José Martí that the best way of speaking is by doing, members symbolically reclaimed damaged areas within the mining zone through tree plantings and the raising of the Puerto Rican flag.

In keeping with Casa Pueblo's emphasis on the importance of the family unit to community development, children were given a central role in the campaign. Under the leadership of one of the teachers, primary school students were invited to join an Environmentalists' Club, attended seminars and workshops on the value of tropical forests, and visited and learned about the proposed forest reserve. Forming their own organising committee, the students prepared presentations for a Children's Assembly, at which more than 200 children signed a document proclaiming the mining zone to be a forest reserve.

All these efforts were not enough to overcome government inertia, however, and the proposal was stalled for many months in the review process. The campaign's impact was finally felt when the Secretary of DNER, speaking on the radio programme with the widest audience in Puerto Rico, agreed to establish a committee to evaluate the proposal and to include on it representatives of Casa Pueblo. This marked the beginning of a series of intense negotiations, which were hampered by the opposition or indifference of most of the representatives from DNER. Fortunately, Casa Pueblo was represented by an excellent team of negotiators, and had the support of one forester and dedicated public servant from DNER with a deep commitment to expanding forest protection in Puerto Rico. Through exposure to examples from other

countries he understood the value of community participation in natural resource management and was prepared to assume a leadership role in the negotiations. The final result of these efforts was a letter from the Secretary to the Governor recommending the establishment of the new forest reserve. All that was needed was the signature of the Governor, and that was achieved on 23 September 1996 with the proclamation creating Bosque del Pueblo ("the People's Forest"), the first addition to Puerto Rico's system of forest reserves in 45 years (see Box 3).

Learning to be forest managers

Having overcome the mining threat and achieved the designation of the new forest reserve, Casa Pueblo faced its biggest challenge yet: to persuade the government to give a community organisation a formal role in the management of the national patrimony for the first time in the country's history. The challenge was daunting. Puerto Rico's Forest Act of 1975 defines management of forest reserves as the actions required to maintain a healthy forest cover while assuring an optimal and sustainable yield of the products and services for which the reserves were established. An organisation wishing to assume responsibility for managing a forest reserve would therefore have to demonstrate a capacity to protect and where necessary rehabilitate the forest, install facilities and provide services to permit appropriate uses, monitor impacts and implement measures to mitigate negative ones, control use, and enforce regulations. The government's willingness to even consider

Box 3. Puerto Rico's forest reserves

Formal protection of Puerto Rico's forests began during the Spanish colonial era. A forest reserve was created to protect the watershed serving the San Juan area in 1876; in 1903, following the U.S. takeover of the island, it became the Luquillo Forest Reserve and later the Caribbean National Forest, an 11,500 hectare area of tropical rainforest managed by the United States Forest Service that supplies water to 20% of Puerto Rico's population and receives over a million recreational visitors each year.

Puerto Rico enacted its own Forest Law in 1917, which "...set apart as Insular Forest all the mangroves on the coasts of the island and adjacent islands, belonging to the people of Puerto Rico" in order to protect these areas from the growing pressure of charcoal production. Over the next 34 years, 14 forest reserves were established, covering a wide range of forest types and providing protection to 24,062 hectares (see Appendix 1). A Forest Service Bureau, which resides within the Department of Natural and Environmental Resources, was established to manage these areas.

No additional forest reserves were created until 1996, when Casa Pueblo's campaign resulted in the establishment of Bosque del Pueblo, stimulating other community initiatives that have resulted in the declaration of six additional forest reserves. The management of two of these reserves includes a level of community participation.

this new type of partnership was based on its well-known financial constraints, as well as the low priority it gave to the management of state forests. From Casa Pueblo's perspective, its involvement in management was crucial since it had little confidence in DNER as an effective forest manager, especially given the agency's long history of support for mining in the area.

Casa Pueblo had opened the door to community management by insisting on a clause in the forest designation that mandated the establishment of a management council to include members of interested community groups. This led to a difficult process of negotiation on the terms of a co-management agreement. While a few persons within DNER saw the opportunities this new approach to management offered, others had serious reservations about handing over management functions to a community organisation. An agreement could not have been reached without the credibility and standing that Casa Pueblo had achieved through its community mobilisation efforts, the advocacy of Casa Pueblo's supporters in the agency, the skilful facilitation of the same DNER colleague who had guided the earlier negotiation process, and finally Casa Pueblo's reluctant decision to accept an agreement that initially gave it little meaningful responsibility.

The formal acceptance came at a public ceremony in Adjuntas' central plaza in December 1996, where the agreement was read and the public was asked to endorse it. The ceremony ended with 150 members of the community affirming their support by becoming members of the new forest's management committee.

During the first year, Casa Pueblo made remarkable progress in creating an actively managed "people's forest". The first major activity was one of great cultural symbolism: the restoration to its original location of an indigenous pre-Columbian ceremonial park that had been removed during the mining explorations. With volunteers from the community and funding from its Café Madre Isla enterprise, it next constructed a three-storey visitor centre, established a recreation area and interpretive trail system, acquired a piece of land to permit more convenient public access to the reserve, and developed a range of other programmes. On the other hand, DNER largely failed to honour its side of the agreement. Armed with its concrete achievements, after nine months Casa Pueblo was able to negotiate amendments to the agreement that gave it a greater share of responsibility as well as a regular financial contribution from government.

Since then Casa Pueblo has proven its commitment and capacity to manage well and cost-effectively. The forest's Community Management Council, which includes scientists and technical advisors as well as community representatives, developed the forest's management plan (see Box 4) based on the integration of science, culture, and the community, and continues to oversee its implementation during annual assemblies. Day-to-day management is supervised by Casa Pueblo's Director and implemented by a small staff of tour guides and workers supplemented by volunteers. Management programmes include:

- *Forest rehabilitation and conservation*: These activities aim to maximise the contribution of the forest to the protection of biodiversity and watershed services. They include silviculture, research, and monitoring, and are largely carried out through collaborative arrangements with universities, research institutes, and individual scientists that also involve and provide training opportunities for students and volunteers.

- *Visitor services:* The forest receives about 5,000 visitors a year. Trained interpretive guides, mostly young people from the Adjuntas community, lead visitors on walks and provide information on the forest's natural and human history. Visitor facilities include the visitor centre and trails, composting toilets, camping areas, and an open-air amphitheatre for holding cultural events. Volunteers and collaborators such as the Camping Association of Puerto Rico have assisted with the design and construction of these facilities.

- *Environmental education:* The forest is actively managed as an open-air teaching laboratory, and children from Adjuntas and other schools throughout the country have played a role in management activities. University of Puerto Rico professors and their students have undertaken research on issues related to forest management, shared information, and offered courses at Casa Pueblo. Graduate students in the fields of planning, architecture, law, and social sciences have undertaken thesis work and field projects that have helped guide management. In collaboration with the Smithsonian Institution, Casa Pueblo has established a permanent biodiversity monitoring plot in the forest and offered courses in conservation.

Not all elements of Casa Pueblo's vision of community management have been achieved, and some of the problems are discussed in the next chapter. But no one would doubt that, despite the limited government input, the quality of management of Bosque del Pueblo is on a par with the best of the traditionally managed forest reserves in Puerto Rico. The

negotiations regarding the management agreement have continued and successive amendments have given Casa Pueblo increasing authority, and the government has demonstrated its satisfaction with the arrangement by an increased annual contribution to Casa Pueblo's management expenses. In 2002, the founder of Casa Pueblo, Alexis Massol González, was awarded the prestigious Goldman Environmental Prize for creating "a new model" of collaborative forest management.

Moving to the next level: protecting the whole watershed

Becoming forest managers taught Casa Pueblo that protecting pieces of Puerto Rico's mountainous spine was not enough to assure the protection of its biodiversity or the supply and quality of the water it produced. Over the past few years, it has therefore launched a series of new initiatives that have helped move the country towards a more holistic approach to watershed management.

One of the arguments that Casa Pueblo had used in support of the establishment of a forest reserve was that a contiguous series of reserves was needed along the spine of the island to provide biological corridors for the safe movement of flora and fauna and more effective protection to watersheds serving major population centres. After taking over management of the forest, Casa Pueblo became even more adamant about the need for such expanded protection, without which it would be unable to meet some of the objectives of its management plan (Box 4). The argument found support from others, and in 1999 the legislature passed a law mandating the government to undertake land conservation measures for the purpose of establishing two biological corridors linking the six existing forest reserves in the west central part of the island, including Bosque del Pueblo.

While the law established the public policy, it did not provide funds to acquire the lands. Rather than simply wait for the government to eventually act, Casa Pueblo started a fundraising campaign to purchase a piece of the corridor between Bosque del Pueblo and another state forest, Bosque de Guilarte. The area, although small (about 60 ha), includes vestiges of primary rain forest and the headwaters of the Rio Grande de Arecibo, which supplies water to 25% of Puerto Rico's population. It also provides habitat for at least two endangered species endemic to Puerto Rico, the Sharp-shinned Hawk (*Accipiter striatus venator*) and the Broad-winged Hawk (*Buteo platypterus brunnescens*). Using the argument that the area supplied the city of Arecibo with water, Casa Pueblo was able to persuade that city's credit union to make

a major contribution as well as to conduct an education programme for its members on the link between forest protection and water supply and quality. Other sources of funding included proceeds from Café Madre Isla and many small contributions from individuals and local businesses. This successful effort in private conservation resulted in 2003 in the creation of the community-managed Bosque Lluvioso La Olimpia (La Olimpia Rain Forest), recognised under the Forest Act as a privately owned Auxiliary State Forest.

A second, and even more ambitious, component of Casa Pueblo's strategy to protect the country's watersheds and forest resources was the establishment of a national fund to purchase and conserve areas critical to water production and of high ecological value. The concept was introduced to Puerto Rico's legislature by Alexis Massol González during a tribute to him upon being awarded the Goldman Prize. In September 2003, following another effective campaign by Casa Pueblo, legislation was passed establishing the fund with an initial investment of US$20 million and provision for annual replenishment. One of the first uses of the fund is expected to be the acquisition of 400 ha of forest to create Bosque La Olimpia forest reserve, whose boundaries would also include the 60 ha already purchased by Casa Pueblo. The establishment of this new reserve will complete the first section of the north central Biological Corridor linking Bosque del Pueblo and Bosque de Guilarte.

The passage of this legislation confirmed Casa Pueblo's successful evolution from a small and often marginalised community group fighting a local mining operation to an articulate and respected national advocate for policy change in support of sustainable development.

A third piece of the strategy is the "Plan for the Conservation of Sensitive Areas in and around Adjuntas". Casa Pueblo developed the plan in response to a Board of Planning initiative to collect information from different communities for a national conservation plan for sensitive areas. Through the use of conservation districts, buffer zones around rivers, and zoning restrictions, the Adjuntas regional plan creates a conservation corridor of nearly 12,000 ha encompassing ten municipalities and linking five forest reserves, in order to protect rivers and watersheds supplying more than one million people in central Puerto Rico. Following public hearings that indicated widespread local, national, and even international support and resulted in a proposal from an adjacent municipality to nearly double the size of the corridor, the Board approved the plan, which will become law once signed by the Governor. The Board of Planning, which was so impressed by the quality of the plan and the level of community involvement in its development

Box 4. A management plan to restore the forest's natural functions

Being located between three state forests covering the west centre of the island, Bosque del Pueblo provides an opportunity to implement an innovative management strategy, in which biological corridors, or interconnected green spaces, permit the free movement of flora and fauna in the wet centre of the island. Puerto Rico's biodiversity has changed as a result of land use practices throughout history. The protection of areas such as this west central region, in which the process of succession is further along or where man's impact has been least felt, is thus extremely important.

The vegetation in the Bosque del Pueblo, characterised as wet subtropical, is dominated by secondary species and native remnants. The forest contains more than 150 tree species, creating a closed canopy at about 20 metres. Although the area was impacted by the mining exploration as well as by agricultural use, the vegetation should be able to recover by managing the native trees that jut out from the canopy in existing patches of vegetation. This type of residual secondary forest retains some natural characteristics even though it has been cut one or more times in the past 80 years. The vegetation has also been influenced by the shade cultivation of coffee, a traditional practice that facilitates succession after the area has been abandoned.

The vision for land use is to protect existing vegetation by concentrating visitor attractions in areas that have been previously disturbed. The management plan calls for rehabilitation to a forest system dominated by native species typical of the life zone. Management aims at protecting the area's hydrological functions and maximising its value as a biological corridor. The use of adjoining lands is important because it is part of the watershed being managed. The plan evaluates the potential uses of these adjoining areas in order to guide the community on appropriate conservation measures.

The management plan includes the following sections:

- general physical and biological description of the area
- management vision, objectives and guidelines for:
  - water
  - wildlife and vegetation
  - social and community linkages
  - recreation
  - interpretation and education
  - facilities
  - research
  - cultural resources
  - landscape values
- definition of management zones: boundaries, objectives, and management guidelines
  - visitor zone: natural areas for dispersed recreational, scientific, and educational activities
  - restricted natural zone: area for controlled use and long term research
  - protection zone: area closed to visitors for rehabilitation and non-manipulative research.

and promotion that its President publicly announced its approval of the Plan at Casa Pueblo, expects it to be used as a template for similar plans for other areas of the country. Casa Pueblo is now embarking on a campaign to promote improved land use practices, such as shade planting of coffee rather than clean clearing, within the area covered by the plan.

Creating capacity in the next generation

As its management capacity has increased, Casa Pueblo has developed an extensive programme of environmental education, the Community Institute of Biodiversity and Culture, in collaboration with the Department of Education, the University of Puerto Rico and the Smithsonian Institution. The Institute is based in the hundred-year-old Adjuntas elementary school, next door to Casa Pueblo. Youngsters between the ages of eight and twelve participate in a programme of cooperative learning that includes research activities in Casa Pueblo's butterfly garden, hydroponics laboratory, nursery, and Bosque del Pueblo. Facilities include a classroom, a laboratory for analysis, equipment for water quality monitoring, a weather station, and a herbarium of flora from Bosque del Pueblo and Bosque La Olimpia. This educational arm has facilitated the involvement of hundreds of primary and secondary school and university students in formal education activities and scientific research. It has also created a cadre of youthful supporters and defenders of Puerto Rico's natural and cultural patrimony.

A workshop at Casa Pueblo on natural resources and community management by Alexis Massol González.

4. Who Casa Pueblo's work has benefited and how

Defining the "community"

Casa Pueblo defines its work as grounded in and driven by "*la comunidad*", a word that can have a broader meaning than its English analogue "community". How exactly does Casa Pueblo define *la comunidad*, and how has that definition evolved over time?

The term certainly includes the town of Adjuntas, where Casa Pueblo is physically located, where most of its leadership lives, where it draws much of its volunteer support, and to whose cultural and economic development it has the most direct commitment. In order to foster the participation of Adjunteño townspeople, Casa Pueblo has built strong alliances with the local schools, and over time with the local planning commission. It has also reached out to include neighbouring municipalities, particularly to fight the mining threat and establish the forest reserve and conservation corridor.

Casa Pueblo also describes its work as grounded in a sense of patriotism, based on a commitment to equitable and sustainable development for Puerto Rico. The definition of community therefore casts a wider net to Puerto Rican civil society generally. And there are a number of indications that Casa Pueblo's work has had a demonstration effect at a national level. Several communities have also advocated for the establishment of local forest reserves and a role in their management. Other municipalities are now working with the Board of Planning to develop conservation corridors. And schools throughout the country have indicated a desire to create programmes similar to the Community Institute of Biodiversity and Culture.

In its institutional relationships, Casa Pueblo understands the importance of strategic alliances and maintains a policy of open doors. It has built collaborative relationships with institutions and individuals from the country's cultural, academic, religious, commercial, professional, and NGO sectors, who share a similar outlook and willingness to support the cause. Farther afield, many scientists, educators, and environmentalists based outside of Puerto Rico have also become part of Casa Pueblo's community.

At the broadest level, Casa Pueblo sees community as uniting all the world's people and its work at the local level to contribute to an international vision of a safe and healthy planet.

On the other hand, Casa Pueblo makes a clear distinction between *community*, however widely defined, and the *state*, including the political institutions and government agencies through which it functions. In fact, it sees the community as having a role and obligation to monitor and when necessary oppose the actions of the state. In its various campaigns, it has attempted to work with the government, influence the government's policies, use the government to achieve its purposes, but not ally itself with the government or draw the government into its circle. It is interesting that from Casa Pueblo's perspective, Bosque del Pueblo is not a story of effective co-management but of effective community-based management. This position has sometimes required its friends and collaborators within government agencies (and there are more than a few of these) to do a delicate balancing act.

Building the community: impacts on stakeholders

Interviews with a cross section of stakeholders, portions of which are quoted below, indicate that Adjuntas is a stronger and more cohesive community as a result of Casa Pueblo's work over the past 25 years. Much of this stems from a widespread understanding of and pride in the area's contribution to Puerto Rico's water supply and the conservation of areas of biodiversity importance. People who were part of the various campaigns to establish the forest reserve, including hundreds of students who are now adults, feel a real sense of ownership of the forest: *"if someday anyone wants to destroy the Forest, we who planted there are going to say no, because here I have a tree, a child, a seed."*

The community's increased sense of cohesion and purpose also stems from the widespread publicity that Casa Pueblo has engendered, which has made people feel less isolated and more connected with the rest of the country. This publicity, along with the forest reserve and Casa Pueblo's other initiatives, has increased the number of visitors coming to and passing through Adjuntas, and Casa Pueblo's vision of the community as a centre for tourism, recreation, and education based on nature, culture, and local products is becoming real: *"Before we thought that there were no [employment] opportunities, no construction, but now I see other opportunities from the commitment of the community to be more natural"*. The value people place on this development was recently seen when community groups successfully took action to stop

development plans that threatened the integrity of the traditional town square: *"we showed that although the government has its advisors and its plans, it is the people who live in the community who should make these decisions."*

People in the community feel that perhaps Casa Pueblo's greatest contribution has been its influence on young people. Through the many activities carried out with local schools, Casa Pueblo has essentially become a part of the local educational system, and this more than anything has contributed to its widespread acceptance as a legitimate and critically important community institution: *"when we started we encountered a lot of prejudice because people thought [Casa Pueblo] was something political. Now it has become integrated into the community and the schools*." People feel that Casa Pueblo will have a long-term impact as a result of its emphasis on educating and empowering children, through their active involvement in the organisation's campaigns and activities such as a water quality monitoring programme for Adjuntas that is carried out by elementary school students from the Community Institute for Biodiversity and Culture: *"[by participating in the water quality programme and in public hearings] my daughters have learned… how to conserve the environment, the importance of planting [trees]."* A recent study by the local elementary school indicated that students involved in the Institute did better academically than those not in the programme, and people who were involved as students in Casa Pueblo's early campaigns see them as a turning point in their lives. People also feel that with the involvement of young people, Casa Pueblo has ensured that its work will endure through future generations.

CIBC field trip to Bosque del Pueblo to learn about community based natural resource management.

5. Learning from the experience

The Bosque del Pueblo experience (see Table 1 for a chronological summary) gives insights into what the main components of a bottom up campaign leading to policy change might include, as well as some of the tools that can assure its success (see Box 5).

Making forest management meaningful to people

Certainly, the first requirement is to get stakeholders interested in the issues. In places where people depend on forest resources directly and on a daily basis, that might not be too difficult. But few of the people living in and around Bosque del Pueblo had any direct connection with the forest for generations and had never been consulted on forest management matters; yet Casa Pueblo succeeded in getting them involved. It did so by avoiding the usual rhetoric and arguments of conservationists, which had little resonance for local people, and employing instead a strategy that offers the following lessons:

1. **Focus on human development.** In all its campaigns and arguments, Casa Pueblo has focused on quality of life issues: the need for clean air and water, for living laboratories for learning, for places for contemplation, rest and recreation. It has also emphasised the importance to a community of being able to protect and manage its surroundings in ways that benefit those who live there as well as future generations. This vision of development, which emphasises sustainability, self-sufficiency, and a balance between social and economic goals, proved to be more compelling than the strictly economic arguments made by the proponents of mining. It also had meaning for more people: all those who depended on water sources originating in the areas being protected through Casa Pueblo's initiatives; all who enjoyed visiting the forest or simply gazing up at it from town; the urban middle class who enjoyed taking in a bit of nature at the weekend; conservationists concerned about the protection of native flora and fauna, and so forth.

2. **Highlight environmental services.** Making the argument for improved quality of life meant giving emphasis to the environmental services that forests provide. For Puerto Ricans, the most important of these is water, which has been a poorly managed resource for many years,

leading to frequent shortages, rationing, and concerns about quality. Casa Pueblo thus devoted considerable attention to sensitising people to the link between management of the upper watershed and downstream water supply and quality.

3. **Concentrate on learning and personal growth, for all ages and sectors of society**. A number of Casa Pueblo's founding members were educators; so it was natural that they would see education as an integral element of their strategy. Through the Institute of Biodiversity and Culture and other environmental education initiatives, Casa Pueblo has worked to transform the level of general understanding about biodiversity and natural resources, and the ways they shape culture and society. Many members of the community, especially young people, have also gained new skills through working as volunteers in the forest. These opportunities have been especially important in a community that had been economically and socially marginalised for many years.

4. **Offer new economic opportunities.** Marginalisation, and the lack of livelihood opportunities generally in rural Puerto Rico, meant that it was essential for the Bosque del Pueblo to offer local economic opportunities, and it has. There has been increased income for businesses in Adjuntas from visitors to the forest, and Casa Pueblo has tried to maximise this by setting conditions of visitation that require passing through Adjuntas to arrange for a guide. Casa Pueblo has also attempted to demonstrate more innovative resource use options that are compatible with forest and watershed management objectives. Café Madre Isla and the ecotourism cabins at Finca Madre Isla provide income for Casa Pueblo's work, but they also are meant to serve as demonstrations for aspiring local entrepreneurs. Casa Pueblo is also exploring possibilities for developing small-scale forest industries such as woodcraft production. More attention to this aspect may be needed in the future to hold public interest and gain the participation of more members of the community.

5. **Make it easy to become part of the process.** It is generally not easy to get people involved in public policy issues: the structure and form of the debate tend to be too intimidating. For the people of Adjuntas, who had experienced government intimidation in the past, this was particularly true. Casa Pueblo therefore needed to find ways to make the process open and accommodating to all who might have something to contribute. They did that through a range of methods: the cultural groups that they established early on to involve the community; the numerous cultural, educational, and social activities

that have been held in public forums; their style and approach, which is open, casual, and unassuming. They have also effectively used the tools of democracy to make people feel their contribution matters: by opening the forest management council to all who wish to be a part, and by holding open meetings to present management plans and agreements and seek the community's public endorsement.

Overcoming power imbalances

The next challenge was to transform the existing technocratic and political process of forest management decision-making into an equitable negotiation among stakeholders. At first, the government could rely on its legal standing to maintain authority and avoid engagement, first on the mining issue and subsequently on the establishment of the forest reserve. Slowly, though, Casa Pueblo was able to assert its claim to be part of the discussions. Some of the tactics that made a difference can be translated into these lessons:

1. **Prepare scrupulously.** Knowledge is indeed power, and governments often rebuff community initiatives by insisting that only they have the technical skills and information to make sound management decisions. Casa Pueblo was able to overcome that argument with the quality of its presentations against mining plans, its proposals in favour of the forest reserve and other initiatives, and particularly its management plan for the forest. In preparing these plans and presentations, it made use of the substantial technical expertise within its membership and among its broader community of supporters.

2. **Demonstrate public backing.** Power also comes from the people, of course, particularly when it comes to winning over the politicians who ultimately create new laws and policies. Casa Pueblo dates its first major victory to the moment that the mayor of Adjuntas, overwhelmed by the level of local opposition, stood out publicly against the mining plans. Throughout all of its campaigns, Casa Pueblo has given attention to building and demonstrating public support, through marches, rallies, and write-in campaigns; and these have been highly effective in gaining the backing of politicians at both the local and national levels.

3. **Maintain the moral high ground.** There is a widespread perception in Puerto Rican society that government is corrupt, that politicians can be bought, and that decisions are made based on personal interests rather than for the public good. Casa Pueblo was able to put that perception to its own advantage by maintaining a demeanour of

integrity and selflessness. All its arguments drew on its long-term development vision for Puerto Rico, one based on improving the lives of all, protecting the national patrimony, and using natural resources sustainably. It also insisted on funding its operations as much as possible through its own activities, such as Café Madre Isla, and to avoid grants or donations from sources that might have caused people to question who was controlling the organisation.

4. **Take control of the debate whenever possible.** In the U.S. system of which Puerto Rico is a part, provision is made for public input into decisions regarding natural resource management through hearings and requests for public comment. But these provisions are based on the assumption that the state will take the lead role in defining the issues and proposing actions and responses. As such, the public is always in the weak position of reacting rather than proposing. Casa Pueblo, on the other hand, entered every stage of the discussions with its own proposals, forcing the government to react to them. Since this is not a role that the government has experience in playing, it weakened their position, while strengthening Casa Pueblo's.

5. **Have a trustworthy and effective intermediary.** Casa Pueblo has learned the importance of having a reliable contact on the inside to help it move proposals and negotiations forward. In the original negotiations on the management arrangements for Bosque del Pueblo, it was fortunate to have an ally within the government, one who was central to all the negotiations regarding the forest and who was able to assure that the community side was not marginalised. In other cases, it has relied with equal success on more neutral but nonetheless conscientious and effective intermediaries.

Table 1. Dates of main events in Casa Pueblo's history	
1980	Taller de Arte y Cultura de Adjuntas (Casa Pueblo) established; start of anti-mining campaign
1985	Casa Pueblo purchases and establishes its headquarters in a historic building in Adjuntas
1986	Casa Pueblo and collaborators halt government's first mining plan
1989	Casa Pueblo creates Café Madre Isla to help finance its operations
1991	Casa Pueblo extends its economic self-sufficiency efforts to Finca Madre Isla
1992	Second anti-mining campaign begins
June 1995	Campaign ends with enactment of law prohibiting open pit mining in Puerto Rico
July 1995-Sept 1996	Casa Pueblo campaigns for the creation of a forest reserve on the lands previously demarcated for mining
Sept 1996	Bosque del Pueblo legally established
Dec 1996	First co-management agreement for Bosque del Pueblo signed between Casa Pueblo and the Department of Natural and Environmental Resources
Aug 1997	Amended agreement signed giving Casa Pueblo greater management responsibility
Jan 1999	Casa Pueblo's campaign for establishment of biological corridors contributes to enactment of a law mandating the eventual unification of forest reserves in west central Puerto Rico
1999-2003	The Government of Puerto Rico establishes five new forest reserves, two with community co-management arrangements
April 2002	Campaign to designate Bosque del Pueblo a biosphere reserve started with submission of proposal from Casa Pueblo to the United Nations
April 2002	Casa Pueblo's founder, Alexis Massol González, is awarded the Goldman Environmental Prize
June 2002	Casa Pueblo begins campaign for a national conservation fund to acquire lands of high ecological value for creation of an expanded system of protected areas
Dec 2002	Casa Pueblo signs agreements with a local elementary school and the University of Puerto Rico establishing the Community Institute of Environment and Culture
March 2003	Casa Pueblo unveils its "Plan for the Conservation of Sensitive Areas in and around Adjuntas" and begins discussions with the local planning commission on its adoption
Jan 2003	Puerto Rico House of Representatives declares Finca La Olimpia in Adjuntas a Biological Corridor and mandates the government to prepare agreements with Casa Pueblo for its management
Aug 2003	Casa Pueblo finalises acquisition of Finca La Olimpia, creating Bosque Lluvioso La Olimpia private forest reserve (subsequently recognised as an Auxiliary State Forest Reserve)
Sept 2003	A national conservation fund, initially proposed by Casa Pueblo, is legally established with an initial capitalisation of US$20 million and provision for ongoing replenishment
March 2004	DNER assigns US$1.3 million from the national conservation fund to acquire 400 ha for the legal establishment of the Bosque La Olimpia in Adjuntas
May 2004	The Puerto Rico Board of Planning holds public hearings on the adoption of the proposed conservation plan for the Adjuntas region
Oct 2004	Government of Puerto Rico approves the Plan for the Conservation of Sensitive Areas in and around Adjuntas, protecting over 14,000 ha of forest, uniting five state forests and creating the country's first biological corridor
Dec 2004	DNER designates Bosque la Olimpia as a new state forest and signs an agreement with Casa Pueblo for its management
Sept 2005	DNER accepts Casa Pueblo's proposal to recognise the area within the Conservation Plan as a Puerto Rican Biosphere Reserve and signs an agreement with Casa Pueblo for its management

Making participatory management work

Having won the right to take a part in management, Casa Pueblo faced a whole new set of challenges. The organisation had no experience in managing a forest reserve; its members and volunteers lacked management skills; and DNER was a reluctant partner in the arrangement. Those at high levels in the agency felt that natural resource management was the exclusive role of the government and that ceding power and responsibilities to a community group would be a serious mistake. And many people at the technical level also had little faith in Casa Pueblo's capability and little will to see it succeed. Casa Pueblo is continually striving to make its vision of participatory management work more effectively, but it has made good progress and some lessons from the experience have already emerged:

1. **Give new management agreements the time and flexibility to evolve.** The agreement between Casa Pueblo and DNER has been amended several times. As this was the first agreement of its kind, it was not guided by actual experience on the ground and has had to evolve with that experience. Both parties were striking out in new directions, requiring initial flexibility to assure an effective collaboration for the future.

   The original agreement, which called for a division of responsibilities between DNER and Casa Pueblo with the government taking the lead role, was not a success. Casa Pueblo understood that the agreement represented a major change in approach for the government, one that many people in DNER were not convinced of, and that any lapses on their part would be snatched on as grounds for terminating the agreement and as proof that the co-management approach was unworkable. It therefore put an enormous effort into meeting its obligations under the agreement, and accomplished a great deal. The government on the other hand had taken on its new responsibilities without the resources needed to carry them out. This is of course a common situation for underfinanced government agencies, which tend to stretch limited resources by using them where they are needed the most (and that was not in a relatively small and remote new forest reserve with little use). But Casa Pueblo, having reluctantly accepted an agreement that gave it a highly unequal role in the partnership, was infuriated by the government's failure to meet its end of the deal, and insisted on revisions to give it greater responsibility. Although DNER continues to have little or no involvement in day-to-day management of Bosque del Pueblo, the agreement now reflects the actual situation more truly.

2. **Employ participatory management approaches that are both economically efficient and technically sound.** Casa Pueblo has been challenged to achieve the objectives of the management plan with limited human and financial resources. It has used this challenge as an opportunity to foster a participatory ethic in the community through a policy of using volunteers to the maximum extent possible. The management plan, interpretive trails, flora and fauna inventories, and research on hydrology, land use, and reforestation needs were carried out with the extraordinary voluntary participation of scientists, technicians, and university faculty. Local volunteers contributed their time, tools, and vehicles to the relocation of the ceremonial ball park and continue to serve as voluntary guides and workers on a daily basis. A biodiversity monitoring plot using internationally recognised protocols, the first in Puerto Rico's forest reserve system, was established with the help of local experts.

   While these accomplishments are impressive, Casa Pueblo has learned that sustaining the interest of volunteers means allowing people to participate equally in decision-making and in work on the ground, according to their interest, availability, and capacity, as well as recognising and valuing small contributions along with large ones. When volunteers choose not to participate, other means are needed to assure that work gets done, and for this reason, Casa Pueblo has also concentrated on developing a core group of members, collaborative partners, and a small paid staff. By taking this innovative approach that encourages yet also recognises the limitations of reliance on volunteers, Casa Pueblo has been able to achieve quite effective management.

3. **Continue to bring in new stakeholders to widen the circle of participation.** While Casa Pueblo has managed to engage an impressive range of stakeholders, there is still the potential, and the need, for greater levels of participation. Specifically, neighbouring landowners need to be integrated into the management of the Bosque del Pueblo/Bosque La Olimpia corridor and the Adjuntas regional conservation area. Casa Pueblo is taking advantage of an upcoming study tour by a group of Latin American rural development students to assist it to develop a strategy for reaching out to this important group of stakeholders.

Box 5. Some keys to Casa Pueblo's successful evolution from protester to policy advocate

1. **Careful research and thorough preparation.** The proposals and plans prepared by Casa Pueblo never looked amateurish, and their scope and level of detail were of a sufficient quality to overwhelm the opposition.

2. **Effective use of the media.** Casa Pueblo took care to tell its own story through the media, rather than letting others interpret it. Appealing media events such as the press conferences in the sky and the People's Forum allowed Casa Pueblo to get its message out to a wide audience.

3. **Development and demonstration of viable and attractive alternatives.** Casa Pueblo was effective in moving the discourse from one that protests to one that proposes alternatives, and also effective in demonstrating the viability of those alternatives through successful initiatives such as Café Madre Isla.

4. **Alliances with like-minded insiders.** Although Casa Pueblo's relations with the government were often strained, it was able to find and nurture relationships with a few key people within DNER, who saw the promise that a more collaborative approach offered their own agency and who were able to assist in negotiations and to move proposals along through inside channels.

5. **Good negotiating skills.** Although often frustrated and even angered by what it saw as government's inefficiency and obstructionism, the Casa Pueblo team was always careful to maintain a respectful and professional demeanour at the negotiating table, so that the discussions never degenerated into name calling and progress was made at each meeting.

6. **Collaboration with others to expand capacity.** Despite its emphasis on self-sufficiency, Casa Pueblo understood the value of collaboration and used it effectively to achieve many of its objectives. Collaborative agreements with research and academic institutions proved to be particularly valuable in preparing and implementing the forest management plan and in training community volunteers and students.

7. **A focus on how good forest management improves the lives of people, locally and nationally.** Many earlier conservation initiatives in Puerto Rico had been dismissed as elitist and as having little relevance to the lives of average citizens. Casa Pueblo's advocacy, on the other hand, has been grounded in its vision of local and national development, a vision in which conservation, culture and effective natural resource management have critical roles.

8. **An unblinking eye on the next challenge.** Casa Pueblo has used each of its victories as a stepping stone to a higher level: from stopping the mining threat to establishing a forest reserve to constructing a biological corridor to creating a national watershed protection fund. In this way, it has helped assure the sustainability of its achievements while building its influence and credibility.

Achieving environmental objectives

It did not take Casa Pueblo long to realise that stopping the mining threat and securing the protection of Bosque del Pueblo were not enough to protect the environmental services needed as the basis for the sustainable development of the Adjuntas region. They therefore expanded their efforts into a series of increasingly ambitious campaigns based on lessons such as these:

1. **Think beyond protected areas.** After several decades of experience, the limitations of traditional types of protected areas as tools for environmental protection in the developing world are becoming apparent. In addition to being routinely poorly financed and undermanaged, they often cover areas that are too small to meaningfully protect important species and ecological processes; they rarely are integrated into wider processes of ecosystem management; and they often attract overuse through their emphasis on tourism and recreation. Casa Pueblo saw these limitations early on and realised it would not be able to achieve its management objectives for Bosque del Pueblo or its broader development vision for the community, except through a holistic approach combining public and private forest reserves, conservation corridors, a conservation plan for the broader Adjuntas area, national funding to expand watershed protection, promotion of improved land use practices, and environmental education.

2. **Push for lasting legal changes.** Casa Pueblo has not forgotten the lesson of its first foray into advocacy, when it succeeded in ending the government's negotiations with mining companies only to have to fight the battle again several years later when new plans emerged. The final goal for that and most subsequent campaigns has therefore been change at the legislative level, to end open pit mining, to create new forest reserves, to establish a national conservation fund, and so forth. This strategy has protected Casa Pueblo's achievements from subsequent policy reversals and has created an increasingly durable framework for the achievement of the organisation's environmental objectives.

3. **Involve the private sector.** Public policy on forest management in Puerto Rico has dealt only with the government's role; the private sector is invited to act responsibly on forest land but is offered no assistance or inducements to do so. Through its work with a local credit union and other businesses to purchase private land for the Bosque La Olimpia, Casa Pueblo has demonstrated that when the

private sector understands the links between good management upstream and downstream quality of life, it can be persuaded to take a role in watershed protection.

6. Creating the institutional framework for implementing forest policy changes

How has policy actually changed as a result of Casa Pueblo's campaigns and initiatives and what have these changes meant in terms of how Puerto Rico manages its forests? Table 2 compares the policy context before and after the establishment of Bosque del Pueblo and the subsequent forest management initiatives of Casa Pueblo. Table 3 indicates how the legal basis for forest management has changed.

Table 2. Puerto Rico's forest policy context before and after the establishment of Bosque del Pueblo

Policy issue	Initial policy context	Current policy context
Forest protection	Secondary forests have little value and are appropriate sites (even when within critical watersheds) for extractive industries and other major developments.	Secondary forests provide important goods and services and require appropriate management measures.
Watershed protection	Existing forest reserves provide adequate protection. Additional land acquisition not a priority.	Area under protection needs to be substantially expanded through national conservation fund for purchase of critical watershed areas and private and community actions.
Biodiversity protection	Existing system of forest reserves provides adequate protection.	Conservation corridors required between reserves to allow safe passage of flora and fauna.
Management approach	Forest reserves managed for multiple use; areas outside reserves not considered in management planning.	Effective conservation requires approaches that take into account the total ecosystem rather than individual components of it.
Management responsibility	State has sole authority for managing state lands.	Other stakeholders can effectively manage or co-manage state lands under appropriate conditions.
Management arrangements	State management agencies have skills and resources to handle all management functions.	Partnerships with local stakeholders, universities, the private sector, and others make for more effective management.
Management decision-making	Decision-making regarding forest management requires a technocratic approach.	Stakeholders are capable of making informed and valuable inputs and have a right to be involved in decisions regarding forest management and policy.

Table 3. Changes in the legal framework for forest management in Puerto Rico, 1995-2004		
Issue addressed	**Dates enacted**	**Contents**
Mining	1995	Amendment to mining law prohibiting environmentally destructive forms of mining, including open pit and strip mining.
Forest reserves	1996-2003	Proclamations establishing Bosque del Pueblo and five subsequent new forest reserves (the first new reserves since 1951).
Biological corridors	1999-2004	Law establishing biological corridors and buffer zones to link forest reserves (including Bosque del Pueblo) in the central west of the island for the purpose of protecting ecological processes and the safe movement of species. Law requires the government to prepare plans for the acquisition and management of lands within the corridors. Legal acquisition of first section of corridor.
National conservation fund	2003	Law establishing and assuring the ongoing capitalisation of a US$20 million national fund for the purchase, management, and conservation of areas of high ecological value, in order to "protect those natural resources that contribute to the improvement of the quality of life of our citizens" and to increase the percentage of land under protected status from 5% to 10%.
Plan for the Conservation of Sensitive Areas in and around Adjuntas	2004	Plan establishing a system of zones for the protection of water bodies, linking five state forests through biological corridors, and outlining conservation strategies for an area covering more than 14,000 hectares.

These changes in the law also have been supplemented by other initiatives, such as a conservation easement law enacted in 2001 to encourage conservation of private lands of high ecological value.

The policy changes stimulated by Casa Pueblo could not have been implemented in the institutional environment that existed at the start of the process. Policy change had to go hand and hand with institutional change, and like the policy process, this process of institutional change is ongoing.

Opening the doors to community management arrangements

Casa Pueblo's work has set a precedent for community participation in managing state forests and other reserves in Puerto Rico. Communities no longer consider that the responsibility for managing natural resources is an exclusive responsibility of the state, and they now expect to take a role in management and decision-making. Following the establishment of Bosque del Pueblo, other communities began demanding new forest reserves in their areas, some of which are now being managed with varying degrees of local participation. The DNER, reversing its historic stand in opposition to community management of natural resources, now publicly endorses the use of community participation as a viable strategy for managing the island's natural resources. The Secretary of DNER has announced his intention to extend the Casa Pueblo model to other forest reserves, and co-management agreements between community organisations and natural resource management agencies are becoming increasingly common in Puerto Rico.

Filling management roles through new partnerships

Casa Pueblo's innovative approach to management has shown that the technical and administrative skills needed to manage natural resources do not reside solely in state agencies but are also dispersed throughout various sectors of society, which can be drawn into new types of management partnerships, such as those that Casa Pueblo has established with such varied institutions as the University of Puerto Rico, the Arecibo Credit Union, and the Camping Association of Puerto Rico.

The value of these partnerships has been felt in other parts of the country. For example, Casa Pueblo was able to organise a research team to carry out studies evaluating the ecological impact of sixty years of military activities on the offshore island of Vieques. These studies documented elevated levels of heavy metals in the local food chain, evidence that supported Puerto Rico's case for the Navy's withdrawal, and contributed to the development of guidelines for making future planning decisions and monitoring their impacts.

Changing the way the government works with others

The ways in which governments work are deeply grounded in history, culture, and the larger policy context, as well as driven by public expectations and demands. For many years, the Puerto Rican public widely accepted that government should play the lead role in the management of natural resources. The pattern of state "ownership" and

control of natural resources that had been established in the colonial era was reinforced by the economic and social changes that followed World War II. DNER therefore evolved a rather authoritarian culture, as well as an approach that considered the management requirements for the resource in isolation from the interests and needs of local people. That culture and approach drove the way that DNER was structured and worked; so changes in the context and requirements of its work could not quickly or easily be translated into changes in the institution. Its skill base was orientated towards managing natural resources rather than working with the stakeholders impacted by and impacting on those resources. Another problem that the agency faced was the limited exposure of most of its staff to other approaches. Those who had some knowledge of participatory approaches in other countries were the quickest to accept the possibility of participatory management of Puerto Rico's forest reserves, and it was this breach in the fortress walls that Casa Pueblo was able to exploit. Although DNER's slow pace of cultural and structural change relative to the community's has been frustrating for Casa Pueblo, as well as for subsequent community partners, what is important is that it has changed and continues to do so (and this evolution is inevitable given the transformation in public attitudes, which government agencies in democratic societies must eventually reflect, however reluctantly).

7. Deconstructing Casa Pueblo's approach to policy change

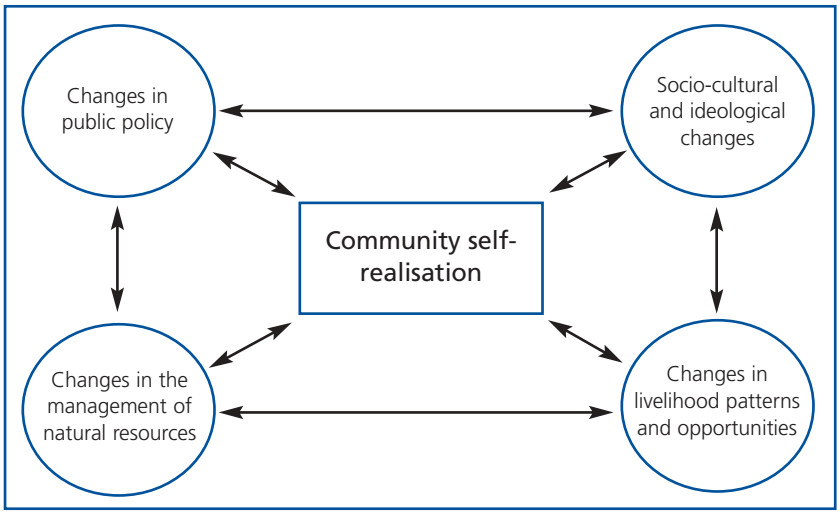
Each of Casa Pueblo's increasingly ambitious campaigns has been driven by a single defining vision for the future of Puerto Rico, one of economic development based on self-reliance and equitable and sustainable resource use, combined with social development through the use and strengthening of local cultural values and practices. The anti-mining campaign taught the organisation that self-reliance required more than defending the country's natural resources, culture, and language. While all of these are fundamental requisites of a healthy environment, quality of life, and happiness, there was also a need for economic and social development strategies to break out of the syndrome of dependency.

In Casa Pueblo's view, the state had proven itself an unreliable guardian of Puerto Rico's natural resources, as demonstrated by its support for open pit mining in critical watershed areas. Thus, the only way that the community could hope to develop economically and socially was by demanding a lead role in natural resource decision-making. Casa Pueblo's leaders also believe that achieving social and cultural development requires taking responsibility for decisions rather than leaving their implementation up to others. This explains their insistence on taking control of the management of Bosque del Pueblo once it had been established.

Casa Pueblo thus sees policy change as an inevitable outcome of processes aimed at creating more resilient, self-reliant, and socially, economically and environmentally sustainable communities – what Casa Pueblo calls "community self-realisation". Such processes must include a reassertion of civil society's role in managing natural resources in order to achieve objectives of social and cultural development.

The following diagram attempts to illustrate the reinforcing links that Casa Pueblo sees between processes of community development and changes in public policy, natural resource management, livelihood patterns, and the fabric of society.

In its work, Casa Pueblo has tried to give balanced attention to every side of this square. The forest is also a teaching laboratory for schoolchildren and a training ground for young volunteers; its headquarters is both a cultural centre and a "factory" where Café Madre Isla is ground and



packaged; its policy campaigns have all been built upon a foundation of community education and sensitisation.

As the diagram indicates, the organisation's core goal is locally driven sustainable community development. The path it pursued in the anti-mining struggle resulted in its focus on forest policy, but forest management is not Casa Pueblo's main vocation, and a different early strategy could have led it as easily into advocacy campaigns aimed at changing economic or social policy. Certainly it sees the need for policy changes at all these levels. Nonetheless, Casa Pueblo's success in protecting forest resources and creating a policy framework for a more integrated and participatory approach to forest management has been well demonstrated.

Although somewhat more difficult to gauge quantitatively, Casa Pueblo has also undoubtedly made significant progress towards its goal of community self-realisation, as the impacts noted in Chapter 4 indicate. Much of what it has accomplished in support of community development has been done under the leadership of a small group of highly dedicated, energetic, and talented individuals and this has been one of Casa Pueblo's major strengths. But it also can feed into Adjuntas' lingering culture of dependency, with some people in the community now looking to the organisation to solve local problems when the government does not. Casa Pueblo actively discourages such dependency, and makes a point of staying out of local issues that are not part of its specific agenda.

8. Summing up: What the Bosque del Pueblo experience says about bottom up policy change

The story of Bosque del Pueblo is important because it is a story of success. By demonstrating how local efforts can change forest policy for the better, at least in societies with more or less democratic systems of government, it refutes widespread perceptions and arguments that community-based struggles are not effective. Indeed, bottom-up policy change is possible even in places like Puerto Rico where formal rules of policy making are mature, entrenched, and hierarchical, and exist at multiple levels from the federal to the territorial to the local. The Bosque del Pueblo story gives numerous examples of how those rules can be used to advantage by determined interest groups, particularly by exploiting every opportunity provided for public input with all possible forms of leverage, including:

- well-orchestrated media events and announcements;
- allies in positions of political, administrative, and intellectual power both nationally and internationally;
- effective demonstration of the weaknesses of opposing positions;
- regular displays of public support, through for example marches, demonstrations, and write-in campaigns;
- engaging policy-makers off their own turf through the use of public forums whose agenda is controlled by the community stakeholders rather than the government.

All of these tools that Casa Pueblo used so effectively assured that the debates and discussions were open and public, which forced the government to remain engaged and protected members from the harassment and personal attacks that had characterised the government's initial reaction to the anti-mining campaign.

The Bosque del Pueblo story also tells us that protecting forest resources can become a priority for people, but that in order to build widespread public support, arguments for forest policy change should be about equity, empowerment, and sustainable development, issues that have immediate and direct meaning to people's lives. These arguments also need to be compellingly articulated by trustworthy messengers and must evolve to address new issues and challenges as they arise.

It may be that bottom-up processes of policy change can find the most fertile ground where policy is stagnant, the state takes little interest, and change is overdue. At the time that Casa Pueblo began to challenge Puerto Rico's forest policy, that policy had been basically unchanged for decades, despite increasing evidence of its ineffectiveness in protecting the island's critical forest and watershed assets from unrestrained development. Casa Pueblo was not alone in seeing a need for change, and was thus able to rally supporters around a new vision.

But even after policies have changed, the machinery of the state is slow to move. Processes of bottom-up policy change therefore cannot end with the creation of a shiny new policy or piece of legislation but must continue pushing against government inertia for the institutional and cultural changes needed to bring the policy to life. The final lesson that the Bosque del Pueblo story gives us is a challenge, because all this requires visionary leadership, coherent strategies, tremendous discipline, and very hard work.

Appendix 1. Puerto Rico's Forest Reserves

Reserve[1]	Year established	Size (ha)[2]	Forest types
Caribbean National Forest	1876/1903[3]	11,500	Subtropical moist, wet, moist lower montane, rain, rain lower montane; forest vegetation has been classified as tabonuco, colorado, sierra palm and dwarf forests
Aguirre	1918	970	Subtropical dry life zone, mangroves, salt flats and a thorn scrub woodland
Boquerón	1918	803	Subtropical dry life zone, mangroves, beach thicket, salt flats and a thorn scrub woodland
Ceiba	1918	224	Subtropical dry life zone, mangroves, beach thicket and salt flats
Guánica	1918	4,223	Subtropical dry life zone, seasonally inundated saline, silty to sandy salt flats, salt-wind exposed limestone, rocky woodland, thorn scrub with deciduous trees and evergreen trees
Piñones	1918	614	Subtropical moist life zone, mangrove and coast beach scrub
Maricao	1919	4,254	Subtropical moist, wet and lower montane life zones, dwarfed vegetation of evergreen, small-leaved species occupies the narrow ridges, peaks and summits
Carite	1942	2,639	Subtropical moist, wet and lower montane life zones, forest vegetation can be classified as upper montane, lower montane, dwarf, early secondary and plantations
Guajataca	1942	928	Subtropical moist life zone, forest associated with karst formation and limestone soils
Guilarte	1942	1,675	Subtropical wet and lower montane life zones, forest vegetation can be classified as upper montane, lower montane, dwarf, early secondary and plantations
Rio Abajo	1942	2,333	Subtropical moist life zone, forest associated with karst formation and limestone soils
Susúa	1942	1,315	Subtropical moist life zone, semidecidous forest and vegetation

Reserve[1]	Year established	Size (ha)[2]	Forest types
Toro Negro	1951 (transferred from U.S. to Puerto Rican jursidiction in 1962)	3,219	Subtropical wet and lower montane life zones, forest associations by elevation gradients named: tabonuco, micropholis-buchenavia, sierra palm and dwarf forests
Vega	1951	448	Subtropical moist life zone, forest associated with karst formation and limestone soils
Cambalache	1951-52	417	Subtropical moist life zone, forest associated with karst formation and limestone soils
Bosque del Pueblo	1996	283	Subtropical wet life zone, late secondary forest with patches of sierra palm and micropholis-buchenavia forest remnants
Tres Picachos*	1999	148	Subtropical wet and lower montane life zones, forest associations by elevation gradients named: tabonuco, micropholis-buchenavia, sierra palm and dwarf forests
Bosque de Cerrillos	1998	56	Subtropical moist life zone, secondary forest fringe of water reservoir
Bosque San Patricio	2001	21	Subtropical moist life zone, secondary and urban forest
Bosque del Nuevo Milenio*	2002	14	Subtropical moist life zone, secondary and urban forest
Bosque Monte Choca	2003	244	Subtropical moist life zone, secondary forest
Bosque La Olimpia	2004	140	Subtropical moist life zone, secondary forest with patches of sierra palm
TOTAL		**36,468**	

1. Managed by Puerto Rico Department of Natural Resources and Environment, except Caribbean National Forest, which is managed by the United States Department of Agriculture, Forest Service.
2. Size noted includes only area under government ownership.
3. First established as a forest reserve by Spain in 1876; Luquillo Forest Reserve established by the U.S. Government in 1903, expanding and becoming the Caribbean National Forest in 1935.

* Asterisks indicate reserves that have a larger area designated but not yet acquired.

Children and the director of the CIBC, Arturo Massol Deyá, present the Conservation Plan for Sensitive Areas to the community and Puerto Rican government agency heads.

Los niños y el director del ICBC, Arturo Massol Deyá, presentan el Plan de Conservación de Áreas Sensitivas a la comunidad y a jefes de agencias del gobierno de Puerto Rico.

A young CIBC researcher with reporters, explaining the role of butterflies in the Conservation Plan.

Jóven investigador del ICBC explicando a reporteros el rol de las mariposas en el Plan de Conservación.

Alexis Massol González at the restored indigenous ceremonial park.

Alexis Massol González en el parque ceremonial indígena.

Annual celebration of Bosque del Pueblo's emblematic bird, the Black-whiskered Vireo, by the voluntary forest wardens, academic workshop attendees and more than 800 students from the island.

Celebración anual del ave símbolo del Bosque del Pueblo, Julián Chiví con la investidura de guardabosques voluntarios, talleres académicos y la participación de sobre 800 estudiantes de la isla.

Young people participating in the annual celebration of the Black-Whiskered Vireo.

Jóvenes participan del "Recibimiento del Ave Símbolo Julián Chiví" en el Bosque del Pueblo.

The Casa Pueblo offices in Adjuntas.

Sede de Casa Pueblo en Adjuntas.

A meeting for CIBC student leaders at Casa Pueblo.

Reunión organizativa con estudiantes líderes del ICBC en Casa Pueblo.

Children attending CIBC workshops for scientific training at Bosque del Pueblo.

Niños del ICBC recibiendo talleres de formación científica en el Bosque del Pueblo.